

In[1]:=

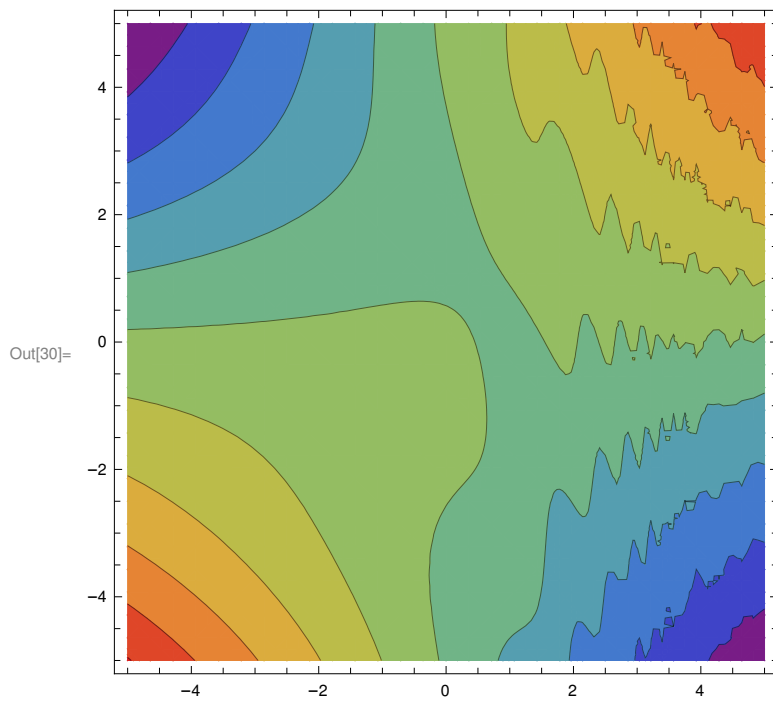
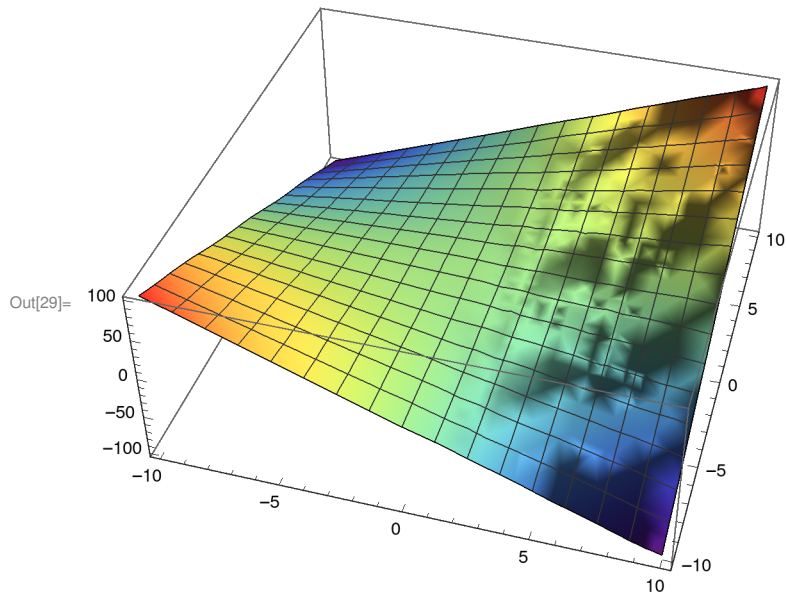
```
SetOptions[Plot3D(*Or whichever plot you desire*),  
  ColorFunction → "Rainbow"(*One of many options*)];  
SetOptions[ContourPlot(*Or whichever plot you desire*),  
  ColorFunction → "Rainbow"(*One of many options*)];  
SetOptions[RegionPlot(*Or whichever plot you desire*),  
  ColorFunction → "BlueGreenYellow"(*One of many options*)];
```

In[*]:= SetOptions[ContourPlot3D(*Or whichever plot you desire*),
 ColorFunction → "BlueGreenYellow"(*One of many options*)];

(*1*)

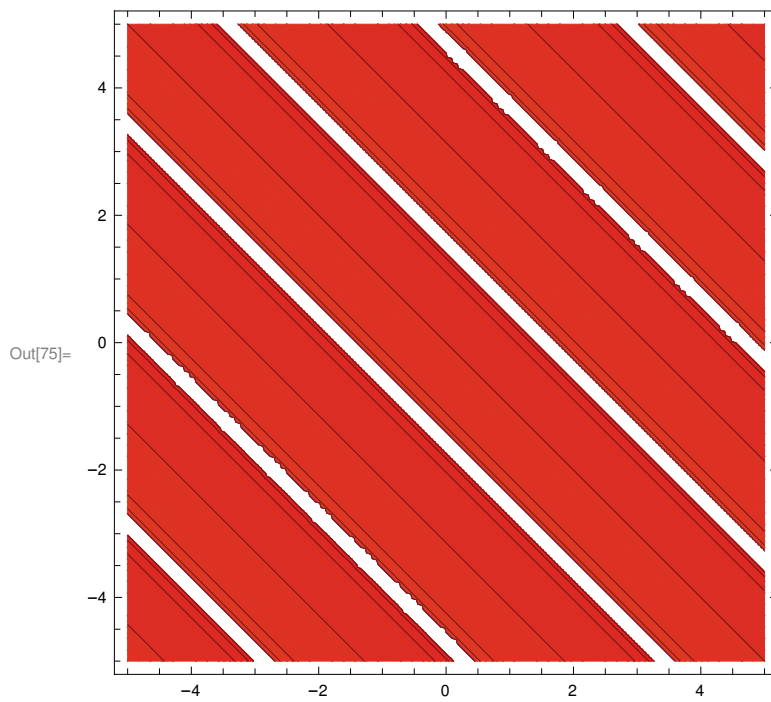
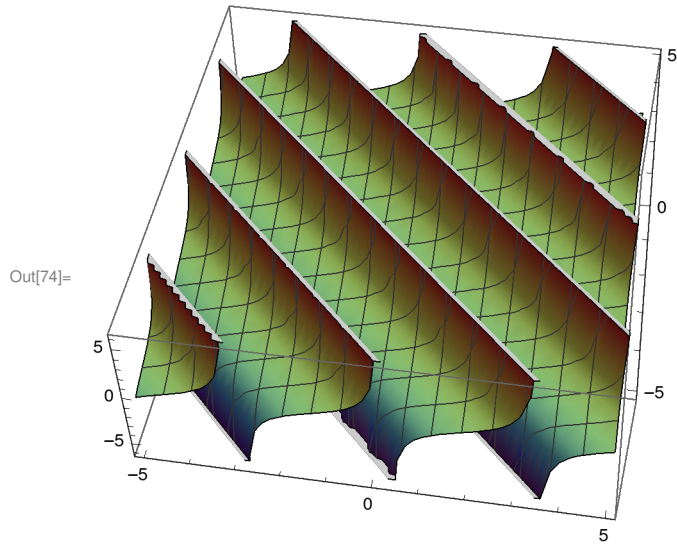
```
In[28]:= f = x * y + Cos[y + Exp[x]]  
Plot3D[f, {x, -10, 10}, {y, -10, 10}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[28]= $x y + \text{Cos}[e^x + y]$



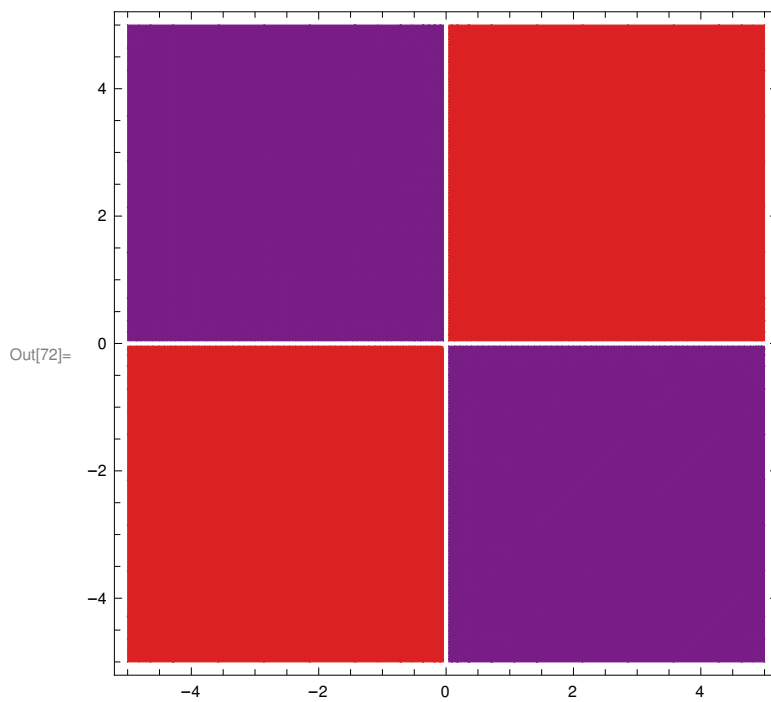
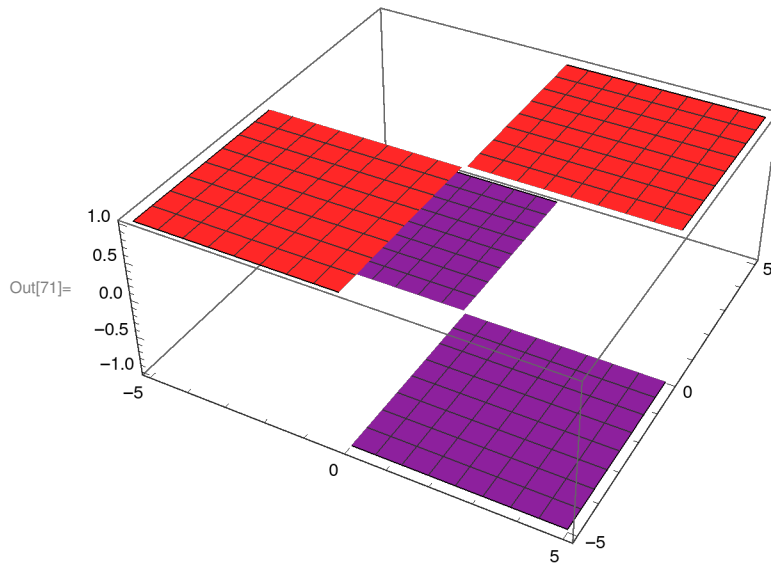
```
In[73]:= f = Tan[x + y]  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

```
Out[73]= Tan[x + y]
```



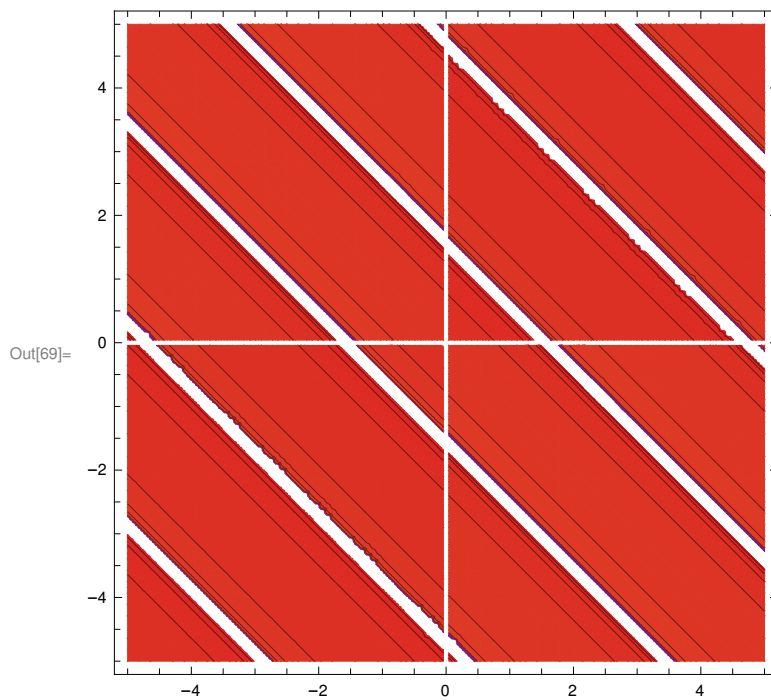
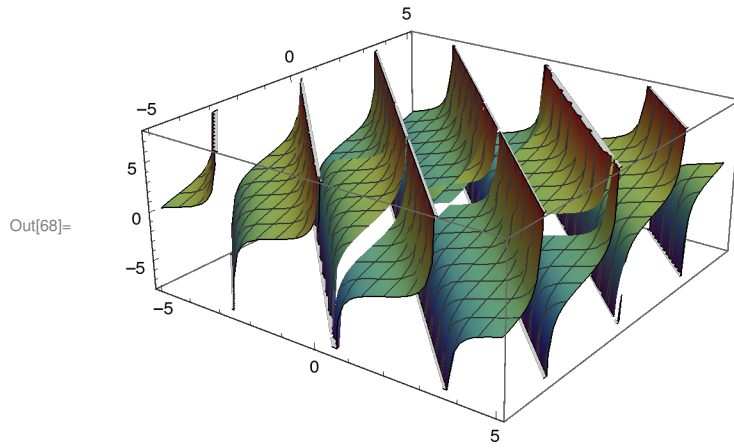
```
In[70]:= f = Sign[x * y]
Plot3D[f, {x, -5, 5}, {y, -5, 5}]
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[70]= Sign[x y]



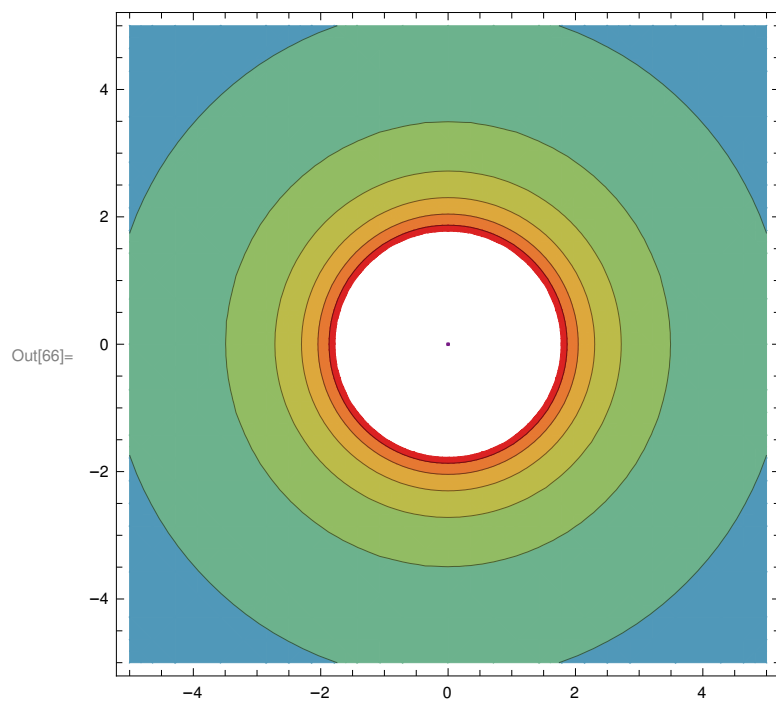
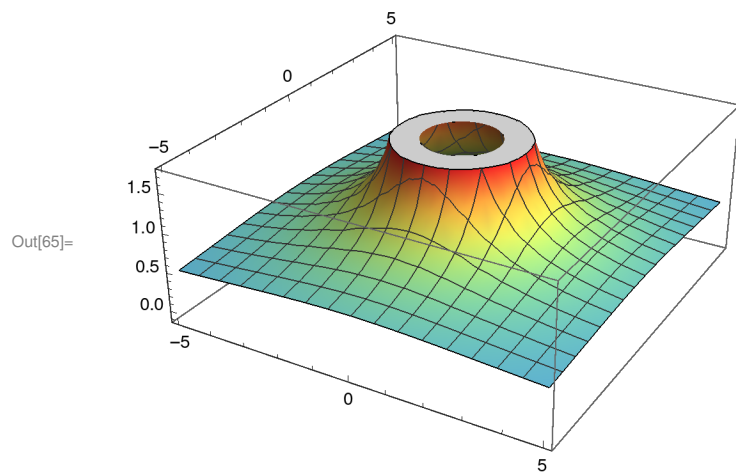
```
In[67]:= f = Sign[x * y] + Tan[x + y]
Plot3D[f, {x, -5, 5}, {y, -5, 5}]
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

```
Out[67]= Sign[x y] + Tan[x + y]
```



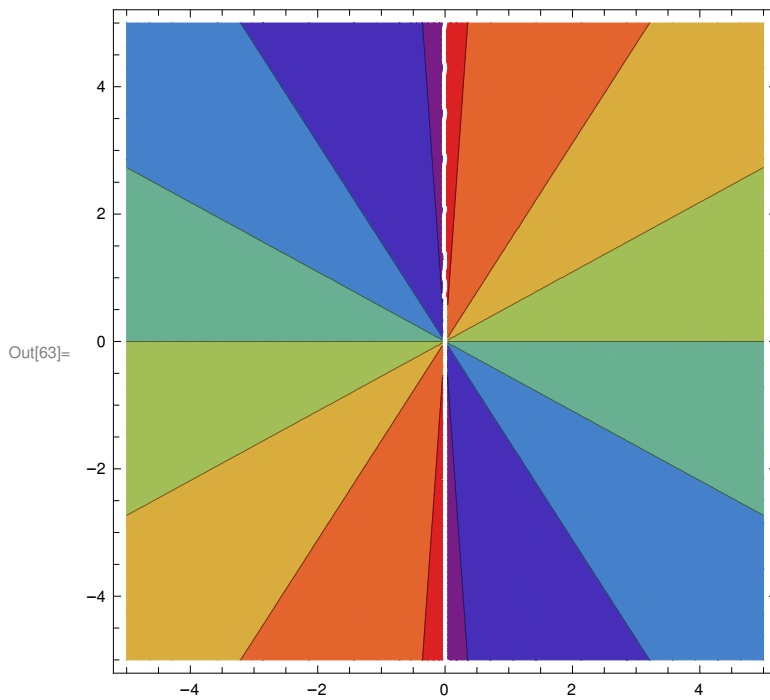
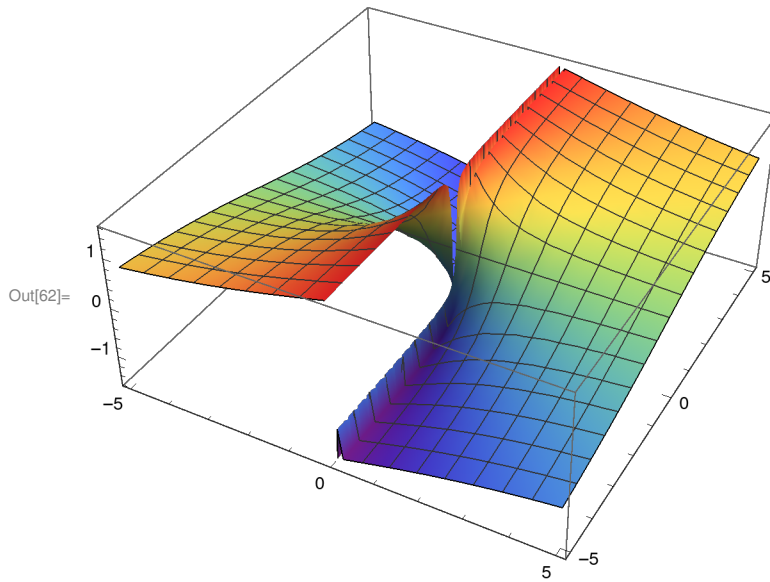
```
In[64]:= f = 1 / (Log[Sqrt[x^2 + y^2]])  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[64]=
$$\frac{1}{\text{Log}\left[\sqrt{x^2 + y^2}\right]}$$



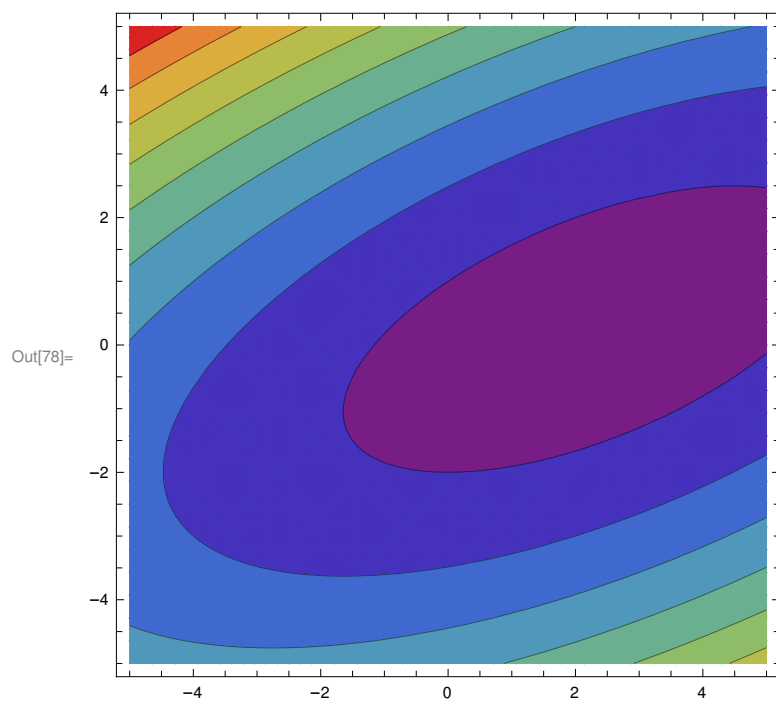
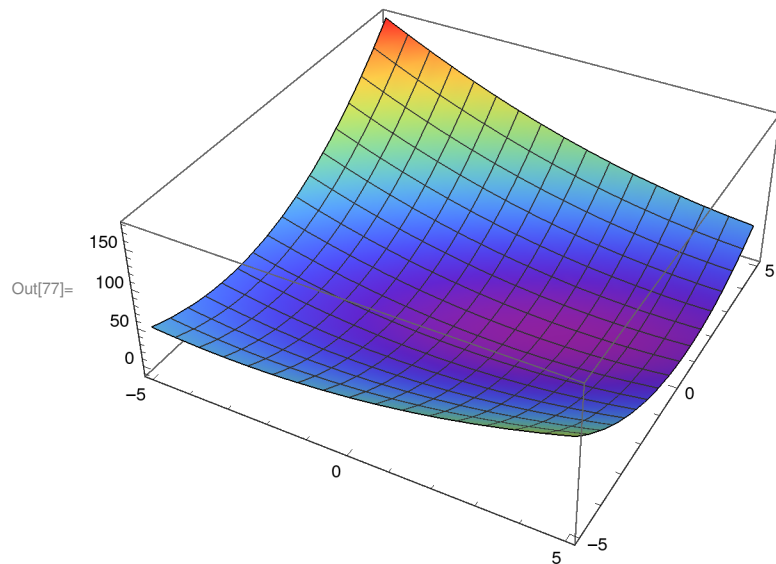
```
In[61]:= f = ArcTan[y / x]  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

```
Out[61]= ArcTan[ $\frac{y}{x}$ ]
```



```
In[76]:= f = x^2 - 2 x * y + 3 y^2 - 4 x + 3 y - 6  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

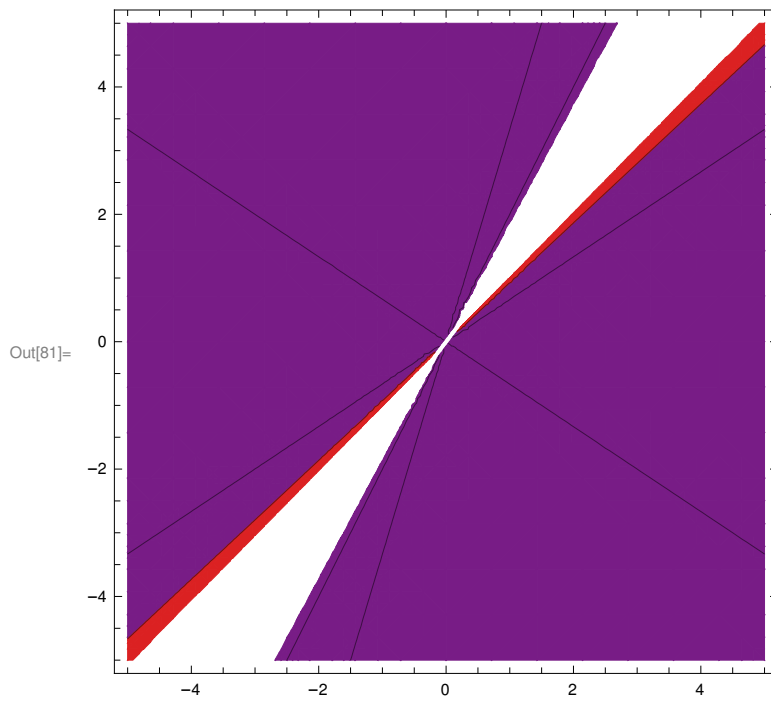
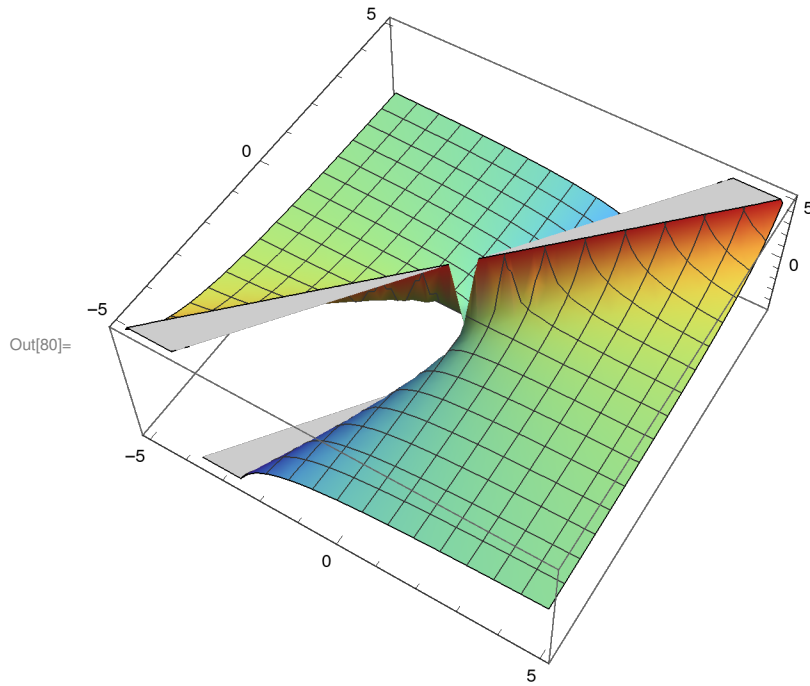
```
Out[76]= -6 - 4 x + x^2 + 3 y - 2 x y + 3 y^2
```




```
In[79]:= f = (2 x + 3 y) / (4 x - 3 y)  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

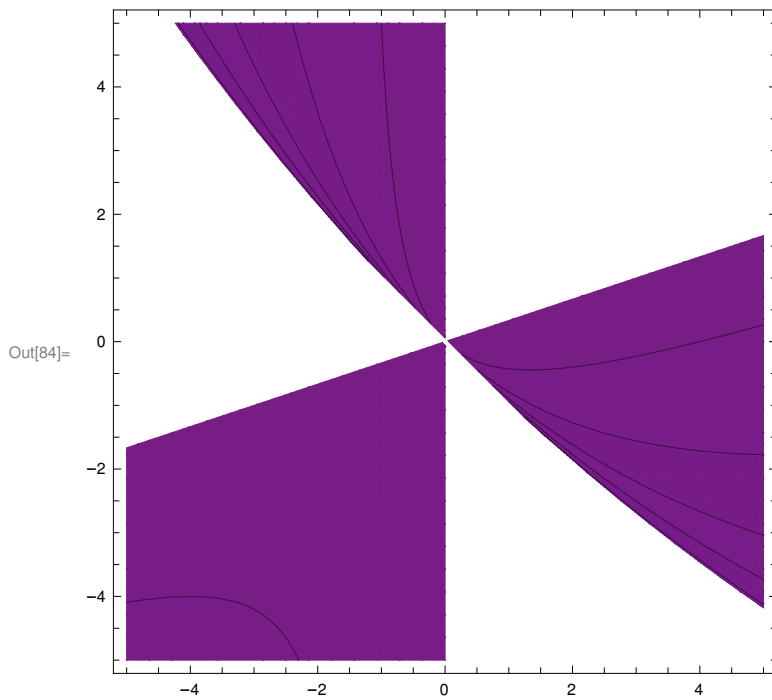
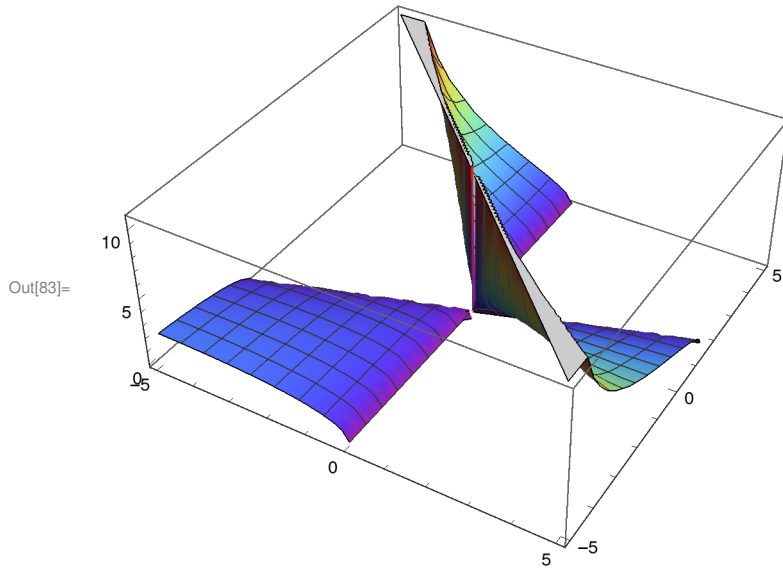
```
Out[79]= 
$$\frac{2x + 3y}{4x - 3y}$$

```



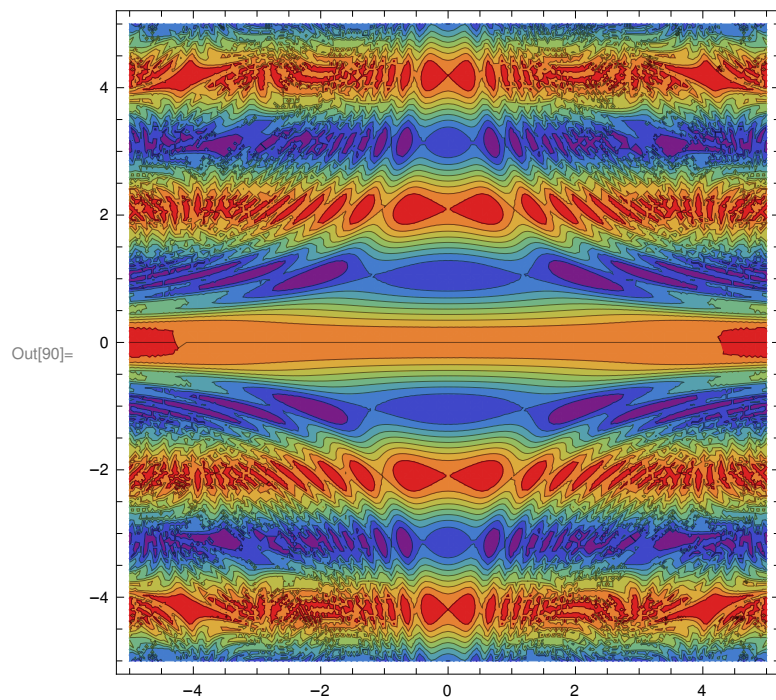
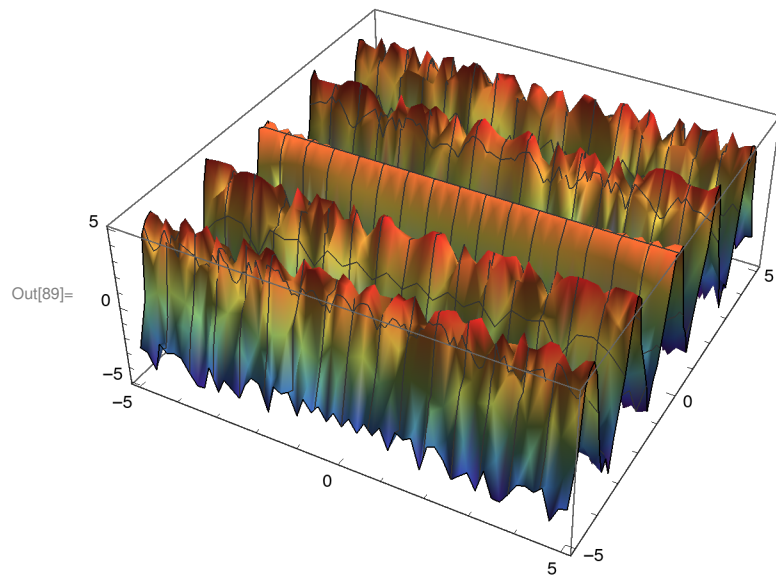
```
In[82]:= f = Sqrt[(x^2 - 3 x y) / (x + y)]  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[82]=
$$\sqrt{\frac{x^2 - 3xy}{x + y}}$$



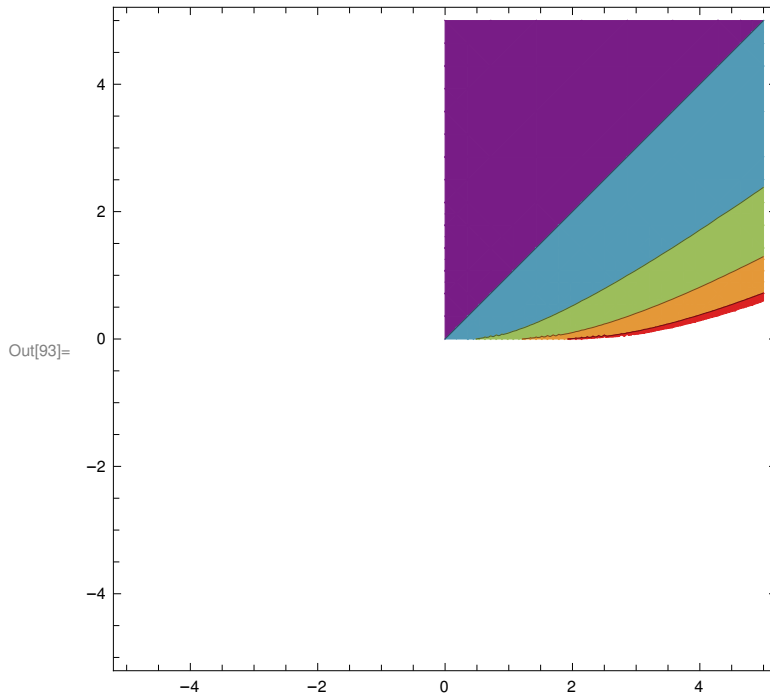
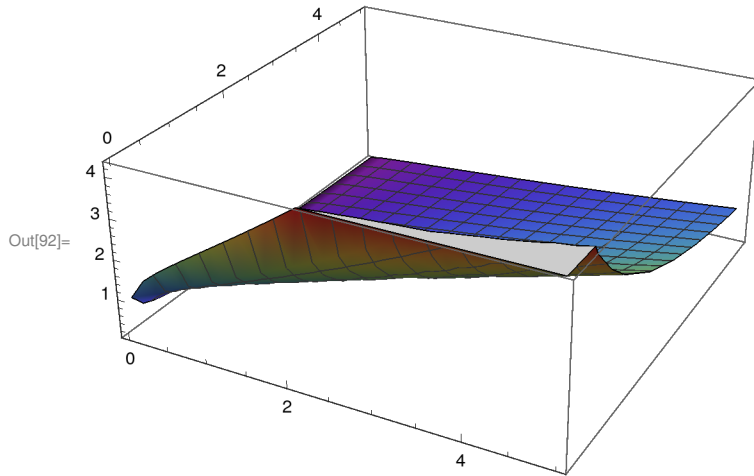
```
In[88]:= f = 4 Cos[3 y] + Sin[x^2 + y^2]  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

```
Out[88]= 4 Cos[3 y] + Sin[x^2 + y^2]
```



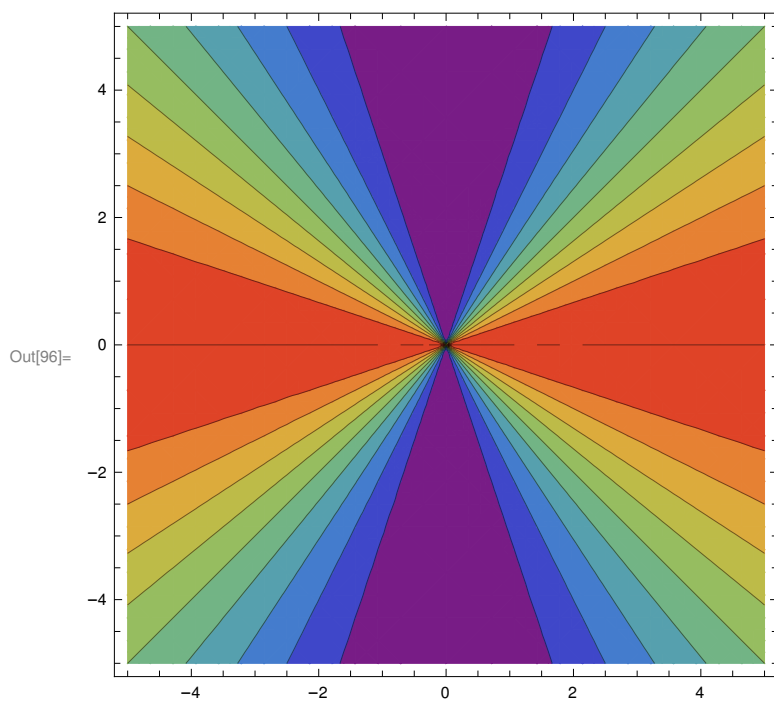
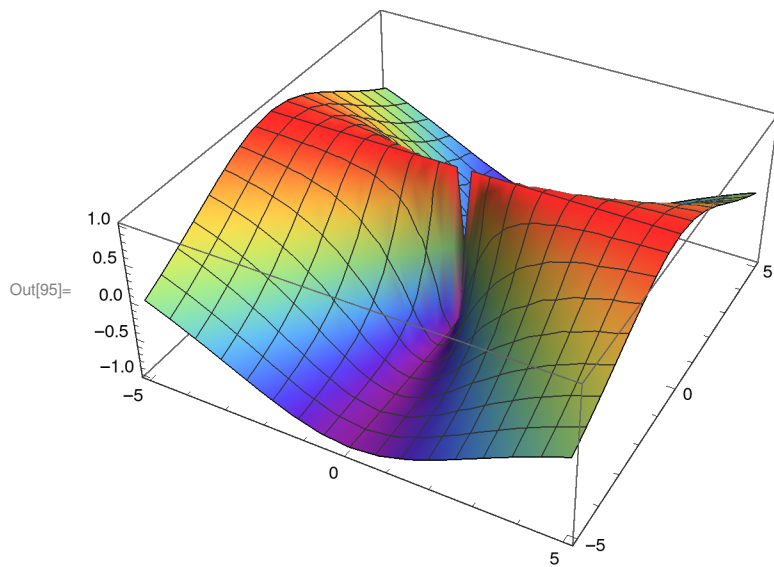
```
In[91]:= f = Exp[Sqrt[x] - Sqrt[y]]  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[91]= $e^{\sqrt{x} - \sqrt{y}}$



```
In[94]:= f = (x^2 - y^2) / (x^2 + y^2)  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

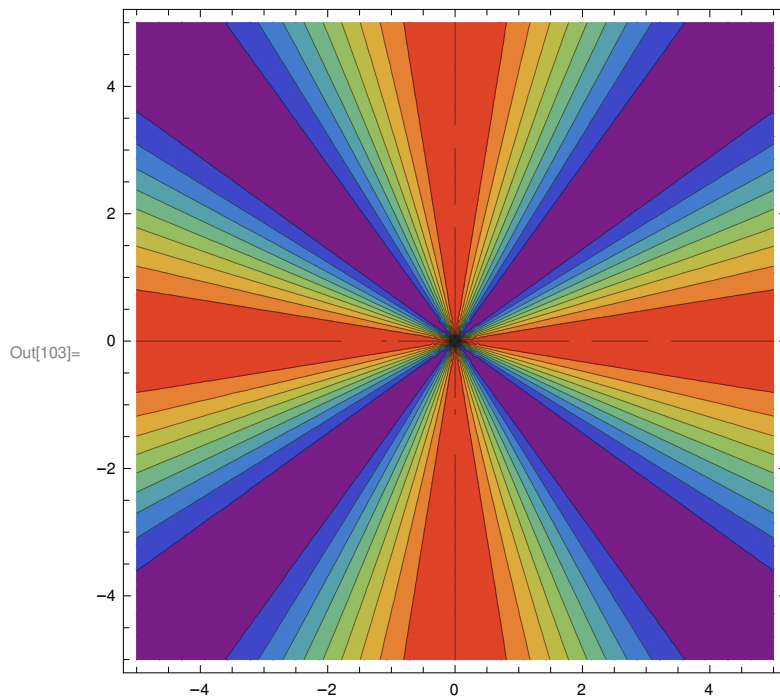
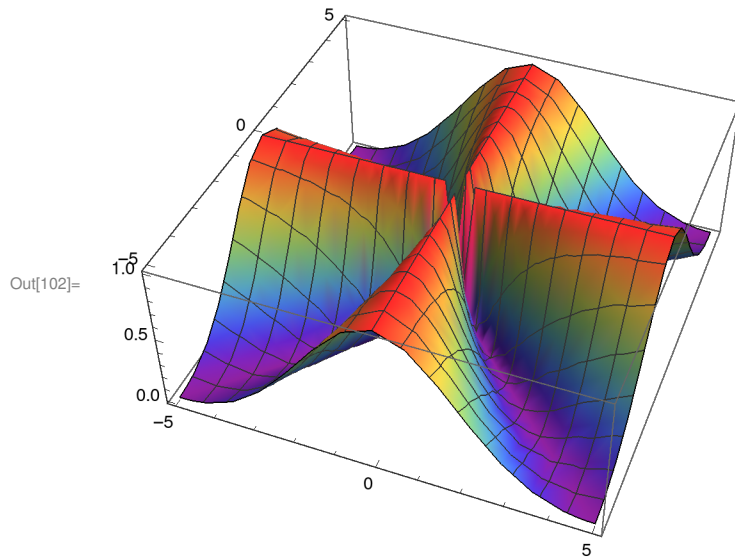
Out[94]=
$$\frac{x^2 - y^2}{x^2 + y^2}$$



```
In[101]:= f = ((x^2 - y^2) / (x^2 + y^2))^2  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

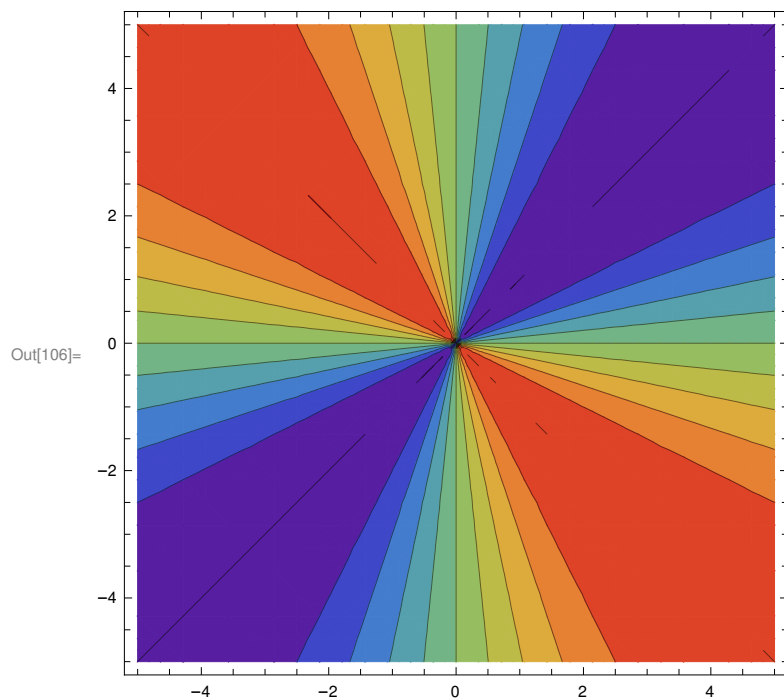
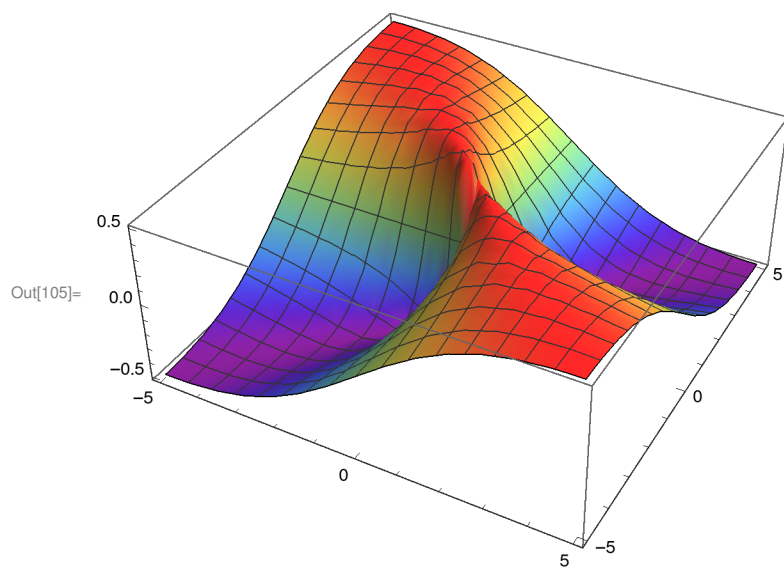
Out[101]=

$$\frac{(x^2 - y^2)^2}{(x^2 + y^2)^2}$$



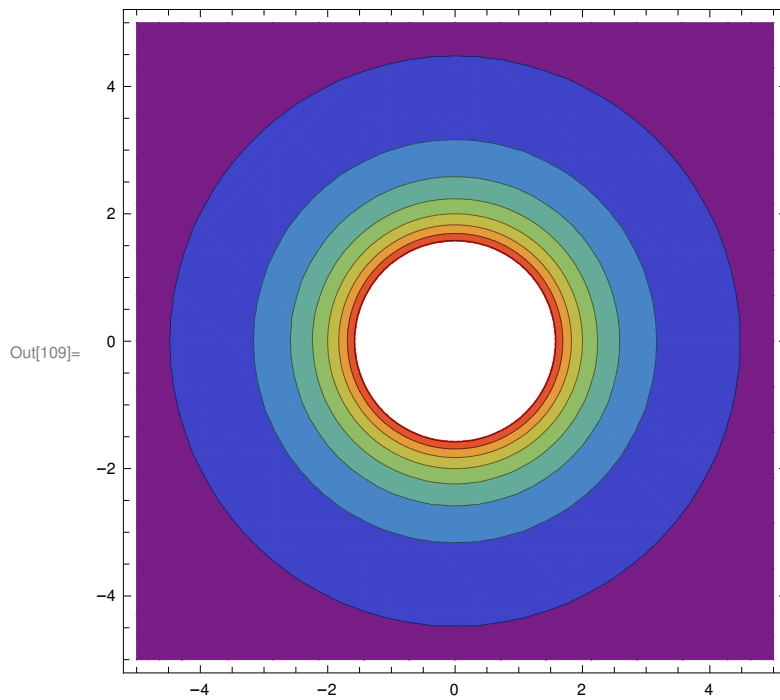
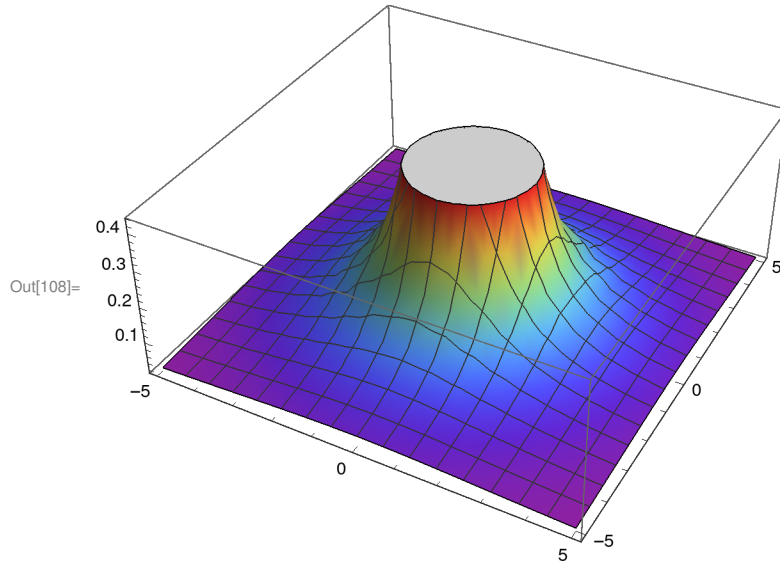
```
In[104]:= f = -x * y / (x^2 + y^2)  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[104]=
$$-\frac{xy}{x^2 + y^2}$$



```
In[107]:= f = 1 / (x ^ 2 + y ^ 2)  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[107]= $\frac{1}{x^2 + y^2}$



(*Extra bonus*)


```
In[110]:= f = (x^2 * y) / (x^4 + y^2)  
Plot3D[f, {x, -5, 5}, {y, -5, 5}]  
ContourPlot[f, {x, -5, 5}, {y, -5, 5}]
```

Out[110]=
$$\frac{x^2 y}{x^4 + y^2}$$

